ABSTRACT

A high electron mobility transistor using a Group III-V compound semiconductor comprises an undoped second channel layer laminated on an InP substrate via a buffer layer, an undoped first channel layer laminated on the second channel layer, and a doped electron-supplying layer laminated on the first channel layer. The first channel layer is composed of $In_{1-x}Ga_xAs$ and has an energy level of conduction band lower than that of the electron -supplying layer at the interface. The second channel layer is composed of a Group III-V compound semiconductor using a Group V element other than P, has an energy level of conduction band higher than that of the first channel layer, and has a band gap wider than that of the first channel layer.